

IN THE CLAIMS

1-11. (canceled)

12. (previously presented) A double balanced mixer comprising:

a source of a symmetrical local oscillator signal;

a switching circuit controlled by said local oscillator signal;

a source of RF signal; and

a printed output circuit having a wideband response for receiving said RF signal and connected to said switching circuit for producing a narrow band IF output signal comprising the frequency difference between said local oscillator signal and said RF signal, wherein said printed output circuit includes a printed balun, wherein the printed balun comprises first and second foil elements, wherein the first foil element is coupled to the switching circuit and to the RF signal source, and wherein the second foil element is displaced from the first foil element and produces the IF output signal.

13. (previously presented) A double balanced mixer comprising:

a source of a symmetrical local oscillator signal;

a switching circuit controlled by said local oscillator signal;

a source of RF signal; and,

a printed output circuit having a wideband response for receiving said RF signal and connected to said switching circuit for producing a narrow band IF output signal comprising the frequency difference between said local oscillator signal and said RF signal, wherein said output circuit includes parallel tuned elements exhibiting said wideband response and series tuned elements exhibiting said narrow band response.

14. (original) The mixer of claim 12 wherein said switching circuit comprises first and second switches, each having a control terminal connected to receive said local oscillator signal, an output terminal and a third terminal connected to ground, said first and second switches being alternately turned on and off in response to said local oscillator signal.

15. (original) The mixer of claim 14, wherein said first and second switches comprise MESFET devices, each having a gate electrode corresponding to said control electrodes, respectively.

16. (currently amended) The mixer of claim 12 21, further including an insulated substrate, wherein the first foil element and the second foil element are displaced on opposite sides of the insulated substrate.

17. (original) The mixer of claim 16, wherein said first foil element is in a parallel tuned circuit and said second foil element is in a series tuned circuit.

18. (original) A double balanced mixer comprising:

a source of a symmetrical local oscillator signal;

a switching circuit controlled by said local oscillator signal, said switching circuit comprising first and second MESFET switches, each having a gate electrode connected to receive said local oscillator

signal, an output terminal and a third terminal connected to ground;

    said first and second MESFET switches being alternately turned on and off in response to said local oscillator signal;

    a source of RF signal;

    an insulated substrate; and

    a printed output circuit having a wideband response for receiving said RF signal and connected to said switching circuit for producing a narrow band IF output signal comprising the frequency difference between said local oscillator signal and said RF signal;

    said printed output circuit including a printed IF balun having a first foil element, in a parallel tuned circuit, connected across said output terminals and a second foil element, in a series tuned circuit, displaced from said first foil element on opposite sides of said insulated substrate.

19. (previously presented) The mixer of claim 16, wherein said switching circuit comprises first and second switches, each having a control terminal connected to receive said local oscillator signal, an output terminal and a third terminal connected to ground, said

first and second switches being alternately turned on and off in response to said local oscillator signal.

20. (previously presented) The mixer of claim 19, wherein said first and second switches comprise MESFET devices, each having a gate electrode corresponding to said control electrodes, respectively.

21. (canceled)

22. (previously presented) A double balanced mixer comprising:

a local oscillator signal input that receives a local oscillator signal;

an RF signal input that receives an RF signal;

an IF output;

a switching circuit controlled by the local oscillator signal; and,

a printed output circuit having a wideband response for receiving the RF signal and connected to the switching circuit for producing a narrow band IF output signal at the IF output, wherein the narrow band IF output signal comprises the frequency difference between the local oscillator signal and the RF signal, wherein

the printed output circuit comprises a balun having an input balun element and an output balun element, wherein the input balun element is coupled to the switching circuit and to the RF signal input, and wherein the output balun element is coupled to the IF output.